Paradigm®

Paradigm Strategy Group, Inc. proudly presents two of our highly rated private programs to the energy professional public

January 21–24, 2003 • Hyatt Regency Bethesda • Bethesda, MD

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Energy markets have undergone a meltdown...

- markets are changing
- rules are changing
- market complexity is increasing

...but risks must still be managed. How do *you* cope?

Paradigm Strategy Group, Inc. proudly presents

A GUIDE FOR SURVIVORS

Two training programs that provide a comprehensive understanding of how derivative tools can add value to the processes of producing, transporting, storing and consuming natural gas and generating power

Essentials of Energy Risk Management

Explains those essential concepts of forward pricing, swaps, basis trading, Congestion Revenue Rights, options & collars

8:00am–5:00pm, January 21, 2003
8:00am–3:00pm, January 22, 2003

Deal Structuring in Natural Gas Markets

Shows how basic energy risk tools are applied in the gas sector to structure synthetic storage, gas daily options, and more

8:00am–5:00pm, January 23, 2003
8:00am–3:00pm, January 24, 2003

Paradigm Strategy Group has conducted seminars for the energy industry since 1996 and has become the preeminent trainer in the specialized area of Energy Risk Management

NATIONAL REGISTRY OF CPE SPONSORS

Paradigm Strategy Group, Inc. is registered with the National Association of State Boards of Accountancy (NASBA) as a sponsor of continuing professional education on the national Registry of CPE Sponsors. State boards of accountancy have final authority on the acceptance of Individual courses for CPE credit. Complaints regarding registered sponsors may be addressed to the National Registry of CPE Sponsors, 150 Fourth Avenue North, Nashville, TN, 37219-2417. NASBA phone number: 615.880.4200 Web site: www.nasba.org

Session Outline Essentials of Energy Risk Management

Day 1

Understanding Risk Management

Why Companies Hedge
- Earnings stability vs. price certainty
- Accessing capital
- Comparing volatilities of crude oil, natural gas, coal and power

Risks Faced Doing Business in Energy
- Directional price risk
- Spread risk vs. price risk
- The critical role of physical supply risk
- Credit risk
- Hedging vs. trading strategies

Identifying Risk Positions
- Physical vs. financial risk exposure
- Being long/short energy without a physical position
- Indexation and its implications to risk exposure

Structure of Trading
- Understanding bid-offer quotes
- Factors influencing the bid-offer spread
- The dealing process
- Role of the market makers and brokers

Pricing Energy in the Forward Market

Knowledge of how to construct and use forward price curves is central to understanding how the core derivative products — futures, options and swaps — function. This section focuses on the concept of forward pricing and price curves, ending with a discussion of basis risk and how it affects different strategies.

Defining the Forward Price Curve
- Based on dealable prices
- Not a price forecast

Pricing Energy in the Forward Market
- The theory of arbitrage-free forward pricing
- Why forward prices in energy don not conform to theory
- Forward pricing disciplines for storable energy products
- Synthetic forwards

The Structure of Forward Price Curves
- Physical supply risk and backwardation in energy price curves
- Seasonality and the price curve for natural gas and refined products
- Price curves for power and coal
- Synthetic storage and storage arbitrage
- Valuing inter-period exchanges of physical energy

Price Curve Applications
- Pricing transactions
- Valuing existing positions
- Mark-to-market vs. mark-to-model
- Role of the price curve in developing hedge tactics
- The role of the price curve in analyzing capital investments in energy

Group Review

Using Swaps to Manage Risk

This section explores swaps as a financial tool in energy risk management including its relationship to the price curve. It explains how swaps serve to separate price risk from physical risk and the array of benefits this generates. Popular strategies are discussed along with more tailored solutions to risk management situations. The concept is extended to basis swaps and the increasingly important multi-fuel swaps.

The Fixed/Floating Swap
- Swap mechanics
- Advantages to companies
- Separating physical risk from price risk
- *Force majeure* issues

Using a Swap to Hedge Price Risk
- Interpreting a dealer quote on a swap
- Determining the index price for natural gas and power
- Constructing a hedge using swap
- Creating and interpreting swap diagrams
- Calculating a hedger's all-in cost with a swap

Swap Pricing
- Defining an fair-value exchange pricing for a swap
- Relationship between swap prices and the price curve
- Fixed price structuring in a swap
- Embedding financing in a swap structure

Group Review

Basis Trading

Basis and Transportation
- Defining location basis
- Basis as synthetic transportation

The Basis Swap as a Risk Management Tool
- Basis as a risk to a hedger
- The structure of the basis swap
- Pricing basis transactions
- Understanding bid-offer quotes in the basis market

Session Outline — Essentials of Energy Risk Management

Day 1 (continued)

Basis Trading (continued)

Using the Basis Swap to Hedge Location Risks
- Managing natural gas basis risk
- Hedging transport/transmission costs with a basis swap
- Managing price risk using basis swaps
- Using a basis swap to eliminate basis risk
- Using a basis swap to optimize risk/return

Pricing Physical Natural Gas Forward
- Pricing from the benchmark price curve
- Embedded options: Swing
- Credit and capital adequacy
- Combining value components to price delivered gas forward

Using Basis Swaps to Transform Risk
- Using basis swaps to optimize risk/return
- Using basis swaps to synthetically transport energy
- Spark spread swaps

Congestion Revenue Rights (CRR)
- Locational Marginal Pricing
- CRR as a basis swap
- Firm transmission through a CRR

Group Review

Day 2

Energy Options

Following a review of the fundamentals of option structures and pricing, the program takes participants into the world of option structures being used today. It explores opportunities that can be developed using creative combinations of option and swap structures. Participants will also explore the economic values associated with options, a critical tool for their future understanding of risk management structures.

Fundamentals of Options
- Option structures and payouts
- Option terminology
- Intrinsic and time (extrinsic) value
- Identifying embedded options

Opting Pricing Basics
- Concept of an option premium
- Influence of the price curve
- Time value and time decay
- How energy options differ from options on financial products
- Understanding volatility

Timing of Exercise
- European vs. American options
- Variations in American-style options in energy
- Embedded financial storage in certain American options

Group Review

Buying Options to Hedge Physical Risk Positions
- Hedging a buyer with a call
- Hedging a seller with a put
- Options as insurance
- Option vs. fixed-price hedging strategies
- Physical vs. financial settlement
- Risk-reward trade off
- Identifying options embedded in physical transactions

Reducing Energy Costs by Selling Options
- Covered vs. naked options
- Cost structure after selling options

Packaged Option Structures
- Linking option strips to create caps and floors
- Combining puts and calls to create collars
- Marketing analysis of collars
- Comparing collar hedging strategies to fixed price and option hedging

Group Review

Workshop: Temple Metals, Inc.

Seminar participants will be divided into project teams, which will each be assigned a detailed case study of a company with energy risk management needs. The project teams will be required to apply option risk management concepts and analytics to solve the company's problems. The case study provides a realistic corporate management context through which the marketing of energy derivatives can be better understood.

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Session Outline Deal Structuring in Natural Gas Markets

Day 1

Basis Spreads and Transportation

There are parallel methods for moving gas from one location to another: a physical method: pipeline transportation and a financial method: buying and selling. The interrelationship between these methodologies gives rise to useful transaction structures and the important basis swap market.

Relationship between Transportation and Locational Basis
- Cost of relocating physical exposure
- Pipeline transportation
- Financial methods
- Extrinsic value in owning pipeline capacity

Basis Swaps vs. a Benchmark
- Quoting convention for basis swaps
- Defining the benchmark
- Creating a fixed price using NYMEX swaps, basis swaps and futures
- Synthetic transportation
- Hedging basis swaps

Managing Locational Risk
- Capacity release
- Pipeline capacity ownership as a long basis position
- Triggers

Optionality on Basis
- Pipeline capacity ownership as option on basis
- Rainbow options on basis

Swing Swap Options on Basis

Group Review

Natural Gas Futures

NYMEX natural gas futures serve as the benchmark around which both physical and financial gas trading revolves. This section introduces the futures contract, its mechanics and its applications as a hedging vehicle. It also delves into the applications of Exchanges of Futures for Physicals (EFPs) and the brand new Exchanges of Futures for Swaps (EFSs).

Natural Gas Futures Contract
- The NYMEX contract
- The mechanics of margins

Using Futures to Hedge
- Structuring a futures hedge
- Cash/Futures basis risk
- Comparing futures vs. swaps

Exchange of Futures for Physicals (EFP)
- Cash/Futures convergence
- Managing execution risk
- EFPs
- Exchange of futures for swaps – EFSs

Group Review

Day 2

Time Spreads and Storage

There are parallel methods for moving gas positions from one time period to another: a physical method: storage and a financial method: buying and selling. This section examines in detail the relationship between these parallel methods and how they might be mixed and matched to address specific customer problems.

Relationship between Storage and Curve Shape
- Time spread as measure of contango/backwardation
- Storage arbitrage
- Synthetic storage
- Extrinsic value in storage
- Buying and selling time spreads

Risk Control using Time Spreads
- Time spread risk
- Rollovers
- Rollbacks
- Barbells & butterfly hedges

Managing Storage Costs using Time Spreads
- Using stack & roll to manage storage
- Storage as an option on time spreads

Short Term Storage Strategies
- Taking advantage of “Park-and-Loan” programs
- Swing swaps
- Gas Daily options
- Swing swap options

Group Review

Session Outline | Deal Structuring in Natural Gas Markets

Day 2 (continued)

Gas Tolling and Multiple-Fuel Structures

Tolling, the process of converting gas to power, can be achieved through physical capacity or through a direct exchange, either of physical or purely financial flows. The economic foundations of pricing and evaluating these cross-energy structures are developed in this section along with other common multiple-fuel transaction structures.

Multiple-Fuel Swaps

- Natural gas vs. electricity structure
- Conversion factors for thermal efficiency
- Understanding heat rates
- Spark spread swaps

Multi-Fuel Pricing

- Pricing natural gas in power terms (per MWh)
- Pricing power in natural gas terms (per MMBtu)
- Embedding spark spread swaps

Natural Gas Tolling

- Tolling through generating capacity
- Direct and reverse tolling
- Fair-value pricing of tolling
- Synthetic tolling using swaps

Optionality in Generation

- Tolling through capacity as an option
- Owning a put on the spark spread
- Dispatch options

Group Review

About Paradigm and Our Instructors

Paradigm provides practical non-theoretical training in energy derivatives, and their related risk management technologies. Programs are structured to the specific needs of today's dynamic energy industry and are designed to excite participants by knocking down the myths and mystiques built around derivative products. Paradigm's instructors offer participants a clear understanding of the business potential arising from combining physical energy and financial products.

Session 1 Program Overview and CPE Credits (Essentials of Energy Risk Management)

Recently, energy markets have endured wave after wave of disasters. However, market risk is more prevalent and in need of management than ever. The regulator's response has been to create even greater complexity, moving from a physical to a financial energy market with FERC's proposed Standard Market Design that imposes Locational Marginal Pricing. The gas markets have also seen sophistication, such as synthetic storage and spark spread hedging.

This session introduces you to the full array of basic tools and concepts that are at the core of understanding this new approach to buying and selling energy as well the hedge management approaches that are possible in this market. This two-day program compresses into two days much of the same materials as is covered in Paradigms four-day (two two-day) sessions on Fundamentals: Energy Trading and Hedging and Using Energy Options. Participants preferring to learn these concepts in a less hurried and less intense format should consider the two two-day sessions. *CPE Credits: Accounting & Auditing 2; Consulting Services 1; Management 1; Specialized Knowledge & Applications 12.*

Session 2 Program Overview and CPE Credits (Deal Structuring in Natural Gas Markets)

Over the last decade, the natural gas market has developed to a point approaching maturity. This allows for a high level of sophistication in transaction possibilities. Moreover, although withdrawal of several large dealers has restricted liquidity, the scope of potential value-added transaction structures remains significant. This program looks at these more sophisticated hedging techniques. It also goes on to demonstrate how the physical processes of transportation, storage and generation interface with their financial counterparts, basis spreads, time spreads and spark spreads, to create useful risk methodologies. It is the understanding of this integration of physical and financial that is key to optimal performance in the natural gas and other energy businesses. *CPE Credits: Accounting & Auditing 2; Consulting Services 1; Management 1; Specialized Knowledge & Applications 12.*

Our Instructors

Paradigm's instructors bring to the classroom the hands-on experience of working in related business areas. Combining this extensive knowledge with their experience in conducting dedicated training for thousands of executives insures that our seminars feature lively interaction between participants and the instructor.

Jeremy B. Rawitz

Over the past seven years, Jeremy has been instrumental in developing training courses for Paradigm's diverse energy industry client base. His extensive experience in product development and client marketing covers all aspects of derivative markets and in particular, commodity derivatives. Jeremy is a recognized leader in the development and delivery of integrated solutions to energy risk management needs, particularly those related to structuring risk management controls and new product development. He has extensive experience as a training consultant and curriculum design specialist. This includes delivering, managing and implementing derivative seminars and training programs in more than 20 countries.

Frank H. Ribeiro

Frank began his career in the energy sector as an Economist with the Federal Power Commission. He has managed profit-generating deal origination and structuring teams at major international institutions. Since 1994 he has worked in close association with leading natural gas and power marketers, researching the emerging trading and deal structuring techniques evolving in these rapidly deregulating industries, and developing application-based training programs for electric utilities and energy marketers.

Venitta M. Ferguson

Prior to joining Paradigm in 1999, Venitta spent her entire career in the natural gas industry. Recognition of her work lead to Venitta's appointment as a member of the Natural Gas Advisory Committee to the New York Mercantile Exchange, where she was instrumental in fostering the acceptance of Exchange instruments within the natural gas industry. Venitta has practical experience in trading the physical energy markets and working with derivative products to control risk.

Registration Form and Related Information

SESSION 1

Essentials of Energy Risk Management

January 21–22, 2003

SESSION 2

Deal Structuring in Natural Gas Markets

January 23-24, 2003

Hyatt Regency Bethesda • Bethesda, MD

Fees (Checks should be made payable to PMA)

SESSION 1: $1,400.00
SESSION 2: $1,400.00
Special Combination Price (1&2): $2,500.00 ($300 Discount)

All fees include a comprehensive manual, continental breakfast, lunch and snacks.

CPE Credits

SESSION 1: Accounting & Auditing 2; Consulting Services 1; Management 1; Specialized Knowledge & Applications 12
SESSION 2: Accounting & Auditing 2; Consulting Services 1; Management 1; Specialized Knowledge & Applications 12

Click Here to Register Online

Register with PMA by Fax or Mail for Paradigm's Energy Risk Management and Natural Gas Courses

Name:_____

Title:_____

Organization:_____

Street Address:_____

City:_____ State:_____ Zip Code:_____

Work Phone:_____ Fax:_____

E-mail:_____

Check the courses you will attend:

___ SESSION 1 ($1,400.00) ___SESSION 2 ($1,400.00)

___ SESSIONS 1&2 SPECIAL ($2,500.00 = $300 Discount)

Your credit card will be charged based upon your selections above.

Credit Card Type: ___Visa ___MasterCard ___American Express

Cardholder Name:_____

Card Number:_____Exp.Date:_____

Signature:_____

Hotel Accommodations

Hyatt Regency Bethesda
One Bethesda Metro Center
Bethesda, MD 20814
(301) 657-1234

$159

Paradigm has made a special arrangement with the Hyatt Regency Bethesda for accommodations. In order to receive the group rate, callers must identify their affiliation with Paradigm Strategy Group, Inc.. Rates cannot be changed at check-in or checkout for guests who failed to identify their affiliation at the time the reservation is made. The reserved block of rooms will be held until the cut-off date of January 3, 2003, 12:00AM. Reservation requests after the cut-off date will be honored on a space-and-rate availability basis. Should a reservation not be canceled by 4:00PM Central Standard Time, or should an individual fail to check into the hotel on the specified arrival date, there will be a charge of one night's room and tax applied their credit card.

Contact PMA (you may register via these contacts)

Phone: (201) 784-5389
Fax: (201)767-1928
E-mail: info@pmaconference.com
Website: www.pmaconference.com

Cancellation Policy

Should you be unable to attend, a substitute participant from within you company is welcome at no extra charge.
For cancellations received in writing (letter of facsimile), 30 days or more prior to the program, we will make a prompt refund less an administrative charge of $100.
We regret that no refunds can be made for cancellations received within 30 days of the program start date.

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